UNIVERSITY OF SOUTH AUSTRALIA
SCHOOL OF GEOINFORMATICS, PLANNING & BUILDING

PROGRAM **Bachelor of Construction Management & Economics**
COURSE **QUANTITY SURVEYING 2N BUIL 4021 (10290) – PROFESSIONAL PRACTICE**
EXAMINATION: **Internal Exam, Semester 1 - June 2002**

DURATION: **3 Hours of Exam time preceded by 10 minutes of Reading time**
Total time 3 Hrs 10 Mins.

EXAMINER: John Deans – Tel : 8302 2921 M : 0438 987 892

INSTRUCTIONS TO CANDIDATES:

- This exam is worth 75% of the total course marks
- **Answer all questions.**
- Marks allocation for each question is shown in brackets.
- Neatness and presentation will count up to 10% of the total marks
- No reference material is allowed in the examination
- A calculator is allowed.
- Candidates must include all loose worksheets with their Answer Books and be clearly marked with their Student ID Number.

THE PAPER IS DIVIDED INTO THREE PARTS (EQUAL MARKS)

(i) PRE-CONTRACT PRACTICE
QS SERVICES PRIOR TO THE SIGNING OF THE CONSTRUCTION CONTRACT

Question 1 15%
Question 2 15%

Both Questions to be answered

(ii) POST-CONTRACT PRACTICE
QS SERVICES DURING CONSTRUCTION WORKS

Question 3 15%
Question 4 15%

Both Questions to be answered

(iii) OTHER QS SERVICES

Question 5 15%
Question 6 15%

Both Questions to be answered

Neatness and general presentation 10%

(i) PRE CONTRACT PRACTICE

QUESTION 1 – CONSTRUCTION CASH FLOW

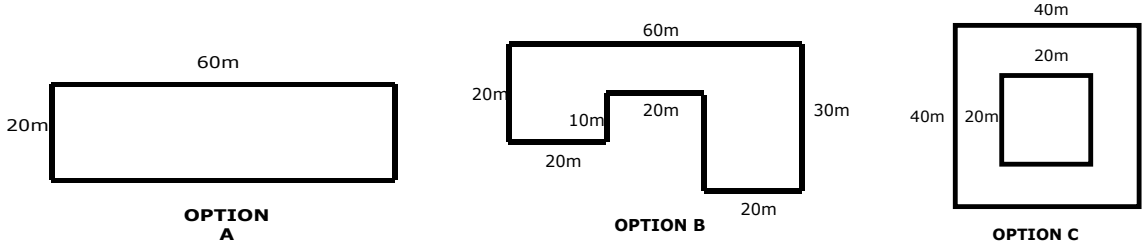
You are a successful Quantity Surveyor/Developer and intend to build a 2-storey block of student apartments on South Terrace to keep for your own long-term investment. In 1 hour you have to present to your bank an Indicative Construction Cash Flow to support your loan application, but you do not have access to "Fincash".

Your Trade Budget Estimate for the construction work amounts to $2,980,000 and it has been decided to deduct a 10% retention sum from each payment to the appointed builder in lieu of a retention bond and that the period for payment is to be one (1) month.

Prepare a tabulated monthly cash flow on Worksheet No. 1 based on the preliminary construction program and trade cost information extracted from your cost plan and as scheduled on Worksheet No. 1 showing the estimated net and cumulative monthly draw down amounts for the proposed construction work.

QUESTION 2 – COST PLANNING PROCEDURES

(a) You are a consultant QS and have just completed the cost estimates for three alternative designs for a four storey office building, each option having the same type of construction and identical plan areas but to the following plan shapes.



Why would the cost estimate of each option would vary significantly?

The client wishes to know what items are causing the major cost differences - what would you tell him?

(b) Explain the following:-

1. Unit rate cost per m2 of the Element
2. Unit rate cost per m2 of fully enclosed covered area (F.E.C.A.)

(c) Define the following cost estimate terms and describe the level of detail and source of information used for the preparation of each estimate:

1. Indicative Cost
2. Preliminary Estimate
3. Limit of Cost Estimate
4. Pre-Tender Estimate

What percentage range of accuracy would be expected for each level of estimate?

(d) Draw a "SYSTEM FLOW CHART" showing cost planning procedures for a construction project from inception to tender and indicate on the flow chart where the estimates (in question (c) above) should occur in order to successfully monitor and control the pre-contract cost of the project.

(ii) POST CONTRACT PRACTICE

QUESTION 3 – PRELIMINARIES CASHFLOW

(a) You are the site Quantity Surveyor for a Builder who is constructing a 6 storey office building over a six month contract period. The following is a summary of the Preliminaries Schedule contained in the Contract documents:

Insurances	5,000
Site Staff	135,000
Site Establishment	8,000
Temporary Offices	12,000
Tower Crane	75,000
Builders' small tools	6,000
Scaffolding	38,000
Site Security	12,000
Temporary Hoardings	8,000
Site Signboard	3,000
Clean up and Handover	4,000
	$306,000

Prepare a tabulated "Preliminaries" Cash Flow for submission to the consultant Quantity Surveyor showing month by month how you are expecting the Preliminaries to be paid on the Monthly Progress Payments.

(b) Indicate on your Cashflow those items that are "time related" and those "non time related" or a combination of both. Explain the difference between "time related" and "non time related" items and why it is important to identify these costs separately.

(c) Calculate a 20 day prolongation cost for a delay in the middle of the construction period for the above appropriate items and explain your methodology.

QUESTION 4 – CONTRACT SITE ADMINISTRATION

(a) Draw a typical construction project "Organisation Chart" showing the position and inter-relationship of the Client, Consultant Team, the Builders Team and his Sub-contractors.

(b) Give a brief definition of the roles and responsibilities of the following key members of the project team:

Builders Project Manager
Builders Site Engineer
Builders General Foreman
Consultant Design Architect
Consultant Quantity Surveyor

(c) Define the following terms and explain briefly their purpose and how they are used to adjust the original contract sum:

Liquidated and ascertained damages
Site instruction
Provisional sum
Daywork schedule
Variation order

(d) What is the importance of:

1. A site diary
2. Maintaining a drawing receipt register
3. Date/time rubber stamp
4. A site camera
5. Site survey plan showing original ground levels

(iv) OTHER QS SERVICES

QUESTION 5 – QS SERVICES

Define the following items and outline briefly the relevance to the Quantity Surveyor:

1. Life Cycle Costing
2. Value Management
3. Construction Cost Auditing
4. Tax Depreciation Schedules for Buildings
5. Expert Witness

QUESTION 6 – DEVELOPER/BUILDER IN RECEIVERSHIP

Construction finance is being provided by the Money Makers Development Bank Pty Ltd to a local Developer to a maximum of $10m for the construction of a new multi-function cinema/entertainment complex. It appears that the Developer has a cash flow problem and is having difficulty in paying the labour, plant and materials supplied to the project. The Bank has appointed you as a consultant Quantity Surveyor to review the Developer's financial situation before the Bank decides whether or not to appoint a receiver/manager. After review of the Developer's accounts for the project, the following situation is revealed:

	DEVELOPEI "ORIGINA BUDGET' PROVIDED BANK	DEVELOPER EXPENDITURE DATE (EXCLUI CREDITORS	DEVELOPER OUTSTANDI EXPENDITUI (CREDITORS	Q.S ESTIMATE COSTS TO COMI THE PROJEC
LABOUR COSTS	2,750,000	1,300,000	-	1,400,000
PLANT COSTS	2,050,000	1,200,000	200,000	300,000
MATERIAL COSTS	3,150,000	1,850,000	900,000	950,000
OVERHEAD COSTS	550,000	350,000	-	250,000
PROFIT	1,000,000	-	-	-
CONTRACT BUDGET	9,500,000	4,700,000	1,100,000	2,900,000

Total Gross Payment Certified to the Developer to date	$3,600,000
Less Retention 10%	$360,000
Total Net Payment	$3,240,000

Draft a report to the bank manager covering the following points:

(a) If the Developer is allowed to continue with the project and the bank continues to provide funds:

1. What is the potential profit to be gained by completing the project and how does this compare with the origin estimated profit?
2. Does it appear that the Developer has been fairly paid for the work he has done to date?
3. How much money will be required immediately to satisfy the creditors?
4. What component of the ongoing expenditure will have to be very carefully monitored?

(b) If the bank decides to withhold any further funding of the project:

1. What are the bank's potential risks/losses?
2. Would it be possible to recover any of the bank's money spent to date - maybe auction the half completed entertainment complex?

Considering all of the foregoing factors and in particular:

1. The amount of money paid to date by way of progress payments to the Developer.
2. The money due to the creditors
3. The potential profit to be made.

Do you think it would be a reasonable commercial risk to allow the Developer to complete the project **or** do you think that the bank should force the Developer into receivership?

End of Paper